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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,911	08/26/2003	William Robert Haas	100203059-1	5753

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EXAMINER

KHAN, USMAN A

ART UNIT PAPER NUMBER

2622

DATE MAILED: 11/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/649,911	HAAS ET AL.	
	Examiner	Art Unit	
	Usman Khan	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

The information disclosure statements (IDS) submitted on 08/26/2003 and 02/03/2005 have been considered by the examiner. The submission is in compliance with the provisions of 37 CFR 1.97.

Claim Objection

Claims 2 and 5 are objected to because of the following informalities: It seems as though in claims 2 and 5 the applicant has typed the word "actuable" mistakenly in the claim the spelling of the word should be corrected to "actuatable". Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 – 2, 4 – 9, and 11 - 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamasaki (US PgPub 2002/0121652).

Regarding **claim 1**, Yamasaki discloses an imager apparatus, comprising: a pixel (figure 4 and paragraph 0099); and a first filter positioned in an incident light path for a portion of said pixel (figure 4; i.e. color filter array of multiple filters for each individual pixel), and filter being operable to alternate between transmitting and reducing incident light on said pixel portion (paragraph 0097; specific wavelengths of light are sent through).

Regarding **claim 2**, Yamasaki discloses the imager apparatus of claim 1, wherein said filter is actuable to block substantially all incident light on said pixel portion (paragraph 0097; specific wavelengths of light are sent through, i.e. it can block all light if none of the wavelengths required are present).

Regarding **claim 4**, Yamasaki discloses the imager apparatus of claim 1, further comprising: at least one additional filter positioned in an incident light path for a respective portion of said pixel and being operable to alternate between transmitting and reducing incident light on said respective portion of said pixel (figure 4; i.e. color filter array of multiple filters for each individual pixel).

Regarding **claim 5**, Yamasaki discloses the imager apparatus of claim 4, wherein each additional filter is actuable to block substantially all incident light to respective pixel portions (paragraph 0097; specific wavelengths of light are sent through, i.e. it can block all light if none of the wavelengths required are present).

Regarding **claim 6**, Yamasaki discloses an imager system, comprising: an array of pixels; a light director positioned to direct light from an object onto said pixels (it is inherent that each pixel will receive light from a detector from the scanning done in figure 37); a plurality of filters associated with each of said pixels (figure 4; i.e. color filter array of multiple filters for each individual pixel), each of said filters being operable to alternate between transmitting and filtering said light for a respective portion of its associated pixel that is different from the pixel portion for each other filter associated with the same pixel (paragraph 0097; specific wavelengths of light are sent through, i.e. it can block all light if none of the wavelengths required are present).; and an operating system connected to operate the filters associated with each pixel in sequence to provide an image spatial resolution greater than without said filters (paragraph 0036).

Regarding **claim 7**, Yamasaki discloses the imager system of claim 6, wherein said filters are operable to block substantially all light from their respective pixel portions (paragraph 0097; specific wavelengths of light are sent through, i.e. it can block all light if none of the wavelengths required are present).

Regarding **claim 8**, Yamasaki discloses the imager system of claim 6, wherein said filters are operable to block substantially less than all light from their respective pixel portions (paragraph 0097; specific wavelengths of light are sent through, i.e. it can block some light if some of the wavelengths are out of the required range).

Regarding **claim 9**, Yamasaki discloses the imager system of claim 6, wherein said operating system operates the filters of each pixel separately from the filters of the other pixels (figure 4; i.e. color filter array of multiple filters for each individual pixel, each pixel can have a different RGB value for filtering light).

Regarding **claim 11**, Yamasaki discloses the imager system of claim 6, wherein said filters are positioned adjacent their respective pixels (figure 3 and 9).

Regarding **claim 12**, Yamasaki discloses the imaging system of claim 6, wherein said filters are positioned adjacent an object to be imaged (figure 5; Note: the examiner is taking adjacent as being anywhere near the required image since adjacent is defined as being lying near, close, or contiguous; adjoining; neighboring).

Regarding **claim 13**, Yamasaki discloses a resolution enhancement method, comprising: filtering incident light from an image to a first portion of a pixel in an imager (figure 4; i.e. color filter array of multiple filters for each individual pixel); reading out a first light indication from said pixel (paragraph 0037); filtering incident light from the image to a second portion of said pixel (figure 4; i.e. color filter array of multiple filters for each individual pixel); and reading out a second light indication from said pixel so that said pixel can distinguish between two spatial regions on said image (paragraph 0037 *et seq.*).

Regarding **claim 14**, Yamasaki discloses the method of claim 13, wherein said filtering comprises substantially blocking said light (figure 4; i.e. color filter array of multiple filters for each individual pixel, each pixel can have a different RGB value for filtering light).

Regarding **claim 15**, Yamasaki discloses a method for scanning an object (figure 37), comprising: directing light from different locations of the object to different portions of a pixel (figure 37); alternately transmitting and at least partially blocking said light for said different pixel locations in sequence (figure 4; i.e. color filter array of multiple filters for each individual pixel); and reading out said pixel at different times corresponding to the transmission of said light to said different pixel portions (paragraph 0141 *et seq.*).

Regarding **claim 16**, Yamasaki discloses the method of claim 15, wherein said pixel is in an array of pixels (figure 4; i.e. color filter array of multiple filters for each individual pixel), further comprising directing light from different respective locations of said object to different portions of each of said pixels (figure 4; i.e. color filter array of multiple filters for each individual pixel), alternately transmitting and at least partially blocking said light for said different pixel portions in sequence, and reading out said pixels so that each pixel can distinguish between more than one spatial region on said image (paragraph 0037 *et seq.*).

Regarding **claim 17**, Yamasaki discloses the method of claim 16, wherein said light is substantially fully blocked for said different pixel locations (paragraph 0097; specific wavelengths of light are sent through, i.e. it can block all light if none of the wavelengths required are present).

Regarding **claim 18**, Yamasaki discloses the method of claim 16, wherein said light is alternately transmitted and at least partially blocked for each of said pixels separately (paragraph 0097; specific wavelengths of light are sent through, i.e. it can block some light if some of the wavelengths are out of the required range).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamasaki (US PgPub 2002/0121652) and further in view of Barr (US patent No. 4,516,032).

Regarding **claim 3**, as mentioned above in the discussion of claim 2, Yamasaki teaches all of the limitations of the parent claim. However, Yamasaki fails to disclose that the said filter comprises a ferroelectric liquid crystal filter. Barr, on the other hand discloses that the said filter comprises a ferroelectric liquid crystal filter

More specifically, Barr teaches that the said filter comprises a ferroelectric liquid crystal filter (figure 2 item 30 and column 4 lines 25 *et seq.*).

One of ordinary skill in the art at the time the invention was made would have found it obvious to incorporate the teachings of Barr with the teachings of Yamasaki because in column 4 lines 16 – 23 Barr teaches that the use of the liquid crystal element that operates to alternate between transmitting and reducing incident light can be controlled in response to brightness; which in turn can correct for the brightness and improved image quality.

Claim 10 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamasaki (US PgPub 2002/0121652) and further in view of Bean et al. (US PgPub 2003/0011700).

Regarding **claim 10**, as mentioned above in the discussion of claim 6, Yamasaki teaches all of the limitations of the parent claim. However, Yamasaki fails to disclose that the operating system concurrently operates the filters in groups of pixels. Bean et al., on the other hand discloses that the operating system concurrently operates the filters in groups of pixels.

More specifically, Bean et al. teaches that the operating system concurrently operates the filters in groups of pixels (paragraph 0008).

One of ordinary skill in the art at the time the invention was made would have found it obvious to incorporate the teachings of Bean et al. with the teachings of Yamasaki because the filtering in group of pixels will result in saved time.

Regarding **claim 19**, as mentioned above in the discussion of claim 16, Yamasaki teaches all of the limitations of the parent claim. However, Yamasaki fails to disclose that the light is alternately transmitted and at least partially blocked for groups of said pixels concurrently. Bean et al., on the other hand discloses light is alternately transmitted and at least partially blocked for groups of said pixels concurrently.

More specifically, Bean et al. teaches that the light is alternately transmitted and at least partially blocked for groups of said pixels concurrently (paragraph 0008).

One of ordinary skill in the art at the time the invention was made would have found it obvious to incorporate the teachings of Bean et al. with the teachings of Yamasaki because the filtering in group of pixels will result in saved time.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Pine (US patent No. 6,958,777) discloses multiple filters for single filter.

Yukawa et al. (US patent No. 6,256,066) discloses a single pixel with a moving filter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Usman Khan whose telephone number is (571) 270-

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1131. The examiner can normally be reached on Mon-Thru 6:45-4:15; Fri 6:45-3:15 or Alt. Fri off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Usman Khan
11/13/06
Patent Examiner
Art Unit 2622



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PRIMARY EXAMINER